

Heavy and almost continuous rains fell over north-eastern Arizona from September 16 to 18, inclusive, and for several days that portion of the State east of Flagstaff was cut off from the remainder of the State. The main line of the Atchison, Topeka & Santa Fe Railroad was put out of commission by washouts, State highways were rendered impassable, and telegraph and telephone communication suspended. The principal damage occurred at and in the vicinity of the town of Holbrook at the junction of the Rio Puerco and Little Colorado Rivers, where many buildings, including residences, were washed away and one life was lost. Streets were inundated and much property along the river banks carried away by erosion. Trains were rerouted through western New Mexico and southern Arizona, and one such train en route from Phoenix, Ariz., northward, was wrecked near Wickenburg, Ariz., resulting in the death of four persons. The rainfall at Wickenburg during September 17 and 18 amounted to 4.50 inches.

Flood stages during September.

River and station.	Flood stage.	Above flood stages—dates.		Crest.	
		From—	To—	Stage.	Date.
ATLANTIC DRAINAGE.					
Roanoke: Weldon, N. C.....	<i>Feet.</i> 30	25	25	<i>Feet.</i> 30.0	25
Saluda: Chappels, S. C.....	14	1	1	14.4	1
Santee:					
Rimini, S. C.....	12	(1)	4	13.2	2
Ferguson, S. C.....	12	2	7	12.5	5
MISSISSIPPI DRAINAGE.					
Arkansas: Wichita, Kans.....	9	28	29	10.5	29
Purgatoire: Higbee, Colo.....	4	18	18	5.0	18
Little Arkansas:					
Sedgwick, Kans.....	18	27	28	24.8	27
Hellers Grove, Kans.....	12	14	15	15.4	14-15
Midian Shrine, Kans. (Wichita, Kans.)..	12	28	28	13.5	28
Canadian, North Fork:					
Woodward, Okla.....	3	18	21	5.3	19
Canton, Okla.....	4	20	20	4.2	20
Oklahoma City, Okla.....	12	20	20	12.2	20
Do.....	12	23	25	13.3	24
WEST GULF DRAINAGE.					
Nueces: Cotulla, Tex.....	15	7	10	16.0	7
RIO GRANDE DRAINAGE.					
Rio Grande:					
Mission, Tex.....	24	12	13	24.5	13
Do.....	24	23	25	25.4	24
Rio Grande City, Tex.....	15	9	13	23.3	11
Do.....	15	21	24	21.5	22
San Benito, Tex.....	21	10	(*)	23.3	22-25
COLORADO DRAINAGE.					
Colorado: Lees Ferry, Ariz.....	12	20	20	13.5	20

¹ Continued from August.

² Continued into October.

MEAN LAKE LEVELS DURING SEPTEMBER, 1923.

By UNITED STATES LAKE SURVEY.

[Detroit, Mich., October 3, 1923.]

The following data are reported in the "Notice to Mariners" of the above date:

Data	Lakes. ¹			
	Superior.	Michigan and Huron.	Erie.	Ontario.
Mean level during September, 1923:	<i>Feet.</i> 602.10	<i>Feet.</i> 579.64	<i>Feet.</i> 571.55	<i>Feet.</i> 245.03
Above mean sea level at New York.....				
Above or below—				
Mean stage of August, 1923.....	+0.04	-0.12	-0.15	-0.38
Mean stage of September, 1922.....	-0.56	-0.73	-0.77	-1.00
Average stage for September last 10 years.....	-0.66	-1.09	-0.94	-1.16
Highest recorded September stage.....	-1.98	-3.79	-2.39	-2.58
Lowest recorded September stage.....	+0.61	-0.02	+0.27	+1.03
Average relation of the September level to:				
August level.....		-0.2	-0.3	-0.4
October level.....		+0.2	+0.3	+0.4

¹ Lake St. Clair's level: In September 574.49 feet.

EFFECT OF THE WEATHER ON CROPS AND FARMING OPERATIONS, SEPTEMBER, 1923.

By J. B. KINCEP, Meteorologist.

The weather during September was favorable, in the main, for field work and farming operations made satisfactory advance in most sections of the country. The soil condition was especially favorable for the preparation for wheat seeding in the central valleys and Great Plains States, and there was sufficient rain for improvement in the far Northwest.

Threshing small grains made rapid progress in the more northwestern districts, but in some parts of the upper Mississippi Valley, especially in Iowa, frequent rains were rather unfavorable for threshing oats, though conditions improved after the first few days of the month. Rainfall in the lower Great Plains was particularly timely for the preparation of wheat land in some sections where it had been too dry. At the close of the month the soil had again become too dry in the more northwestern States.

Unseasonably cool weather prevailed in north-central districts about the middle of the month, when freezing temperatures occurred in numerous localities in the northern border States from North Dakota eastward. Heavy to killing frosts occurred in most sections of Minnesota and Wisconsin, with severe damage to some crops, particularly to late truck and gardens. There was also a varying amount of frost damage in Iowa, northern Illinois, central and northern Indiana, Ohio, New York,